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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,731	08/31/2001	Susumu Takahashi	1186.1019	8415
21171	7590	10/24/2003	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			RAO, SHRINIVAS H	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 10/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/942,731	<b>Applicant(s)</b> TAKAHASHI ET AL.	
	<b>Examiner</b> Steven H. Rao	<b>Art Unit</b> 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28,30-43,45-54 and 56-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-28,30-43,45-54 and 56-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4nad 7</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of paper submitted under 35 U.S.C. 119(a)-(d), claiming priority from Japanese Patent Publication No. 2000-264438 filed August 31, 2000 which papers have been placed of record in the file.

### ***Drawings***

The drawings filed on August 31, 2003 have been objected to by the drafts person for reasons stated in the enclosed PTO- 948.

New corrected drawings are required in this application.

Applicant is advised to employ the services of a competent patent drafts person outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Information Disclosure Statement***

Acknowledgment is made of receipt of Applicant's Information Disclosure Statement (PTO-1449) filed on December 05, 2001 and December 20, 2001 .

The references on PTO 1499 submitted on 12/5/01 and 12/20/01 are acknowledged. All the cited references have been considered. However the foreign

patents and documents cited by applicant are considered to the extent that could be understood from the abstract and drawings.

The contract staff has been instructed to mail copies of the initialed PTO-1449s along with the instant Office Action.

***Preliminary Amendment Status***

Acknowledgment is made of entry of preliminary amendment filed 12 /05 / 01 has been entered on February 08, 2002 . .

Therefore claims 29, 44 and 55 have been cancelled by the amendment and claim 52 has been amended .

Claims 1-28, 30-43,45-51, 53-54 and 56-60 as originally filed are currently pending in the Application.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-28,30-43,45-54 and 56-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanabe et al. (U.S. Patent No. 6,118, 586 herein after Tanabe).

With respect to claims 1, 9, 20, 52 Tanabe describes an optical film comprising diffraction grating cells arranged in a matrix, ( col.2 lines 60-65, etc.) each cell comprising blazed type or binary type curved gratings. ( Tanabe figures 2/3, etc.).

With respect to claims 2, 10, 21,42,53 Tanabe describes the optical film according to claim 1, wherein said gratings contain different profiles. ( col. 5 lines 34-48).

With respect to claims 3, 11,22, 43,54 Tanabe describes the optical film according to claim 1, wherein said gratings contain the same profile and arranged in parallel with each other. ( col. 5 line 30-34). ( LCD layer and display ( cl.9) col.2 lines 56-62).

With respect to claims 4,12, 23,44 Tanabe describes the optical film according to one of claims 1 to 3, wherein said gratings include at least two grating pitches.( ( col. 7 lines 17-30).

With respect to claims 5,13 24, 37,45,56 Tanabe describes the optical film according to one of claims 1 to 3, wherein an angle of a slope of the gratings is uniform. ( Tanabe figure 2).

With respect to claims 6, 14, 38,46 Tanabe describes the optical film according to one of claims 1 to 3, wherein a surface of said diffraction grating cells is provided with a reflection layer. ( Figure 1,9).

With respect to claims 7,15,25, 28, 39,47 Tanabe describes the optical film according to one of claims 1 to 3, wherein the grating has a gentle slope and a steep slope in a cross section and a surface of the gentle slope is provided with a reflection layer. ( figures 2 and 3, and see above rejections).

With respect to claim 8, 16, 26, 40 ,48 and 57 Tanabe describes the optical film according to one of claims 1 to 3, wherein fine rectangular or elliptic projections or recesses are formed on a surface of said diffraction grating cells with a short axis thereof agreeing with a direction of juxtaposition of said gratings. ( Tanabe col. 16 lines 23-35, and Tanabe figs. 2,3).

With respect to claims 17, 49 ,58 Tanabe describes the display device according to one of claims 9 to 11, wherein said liquid crystal display layer comprises pixels arranged in a matrix; and said diffraction grating cells and said pixels show a one-to-one correspondence. ( Tanabe example 8 , col.16 lines 23-35).

With respect to claim 18 Tanabe describes the display device according to one of claims 9 to 11, wherein said liquid crystal display layer comprises pixels . ( Tanabe col. 6 line 62 to col. 7 line 6).

With respect to claims 27, and 59 Tanabe describes arranged in a matrix; and a pitch of arrangement of said diffraction grating cells is integer times of a pitch of arrangement of said pixels or vice versa. ( Tanabe col. 16 line 36 to 44).

With respect to claim 19, 51 Tanabe describes the display device according to one of claims 9 to 11, wherein the grating has a gentle slope and a steep slope in a cross section and the gentle slope is directed to above a display screen of said display device. ( Tanabe figures 2 to 6 etc.) .

With respect to claim 30 Tanabe describes an optical film comprising: diffraction grating cells arranged in a matrix, each cell comprising curved gratings, wherein said gratings include at least two grating pitches. ( rejected for reason set out under claims 1 and 2 above).

With respect to claim 31 Tanabe describes the optical film according to claim 30,  
wherein said diffraction grating cells are blazed type diffraction grating cells. ( rejected for reason set out under claim 1 above).

With respect to claim 32 Tanabe describes the optical film according to claim 30 wherein said diffraction grating cells are binary type diffraction grating cells. ( rejected for reason set out under claim 1 above).

With respect to claim 33 Tanabe describes the optical film according to one of claims 30 to 32, wherein, a pitch dy of arrangement of the gratings is changed in a cell so as to change either or the tangent of a y stepwise by a constant value, wherein is an angle in

the vertical direction at which incident light enters the diffraction grating cells,  $\alpha$  is an angle in the vertical direction at which diffracted light emits from the diffraction grating cells, and  $\lambda$ , ( $= d \times (\sin \theta + \sin \alpha)$ ) is a wavelength of diffracted light. ( col. 10 lines 17 to 29).

With respect to claim 34 Tanabe describes the optical film according to one of claims 30 to 32, wherein a pitch of arrangement of the gratings in a diffraction grating cell is constant and a pitch of arrangement of the gratings is changed from cell to cell so as to change either  $\alpha$  or the tangent of  $\alpha$  stepwise by a constant value, wherein  $\theta$  is an angle in the vertical direction at which incident light enters the diffraction grating cells,  $\alpha$  is an angle in the vertical direction at which diffracted light emits from the diffraction grating cells, and  $\lambda$ , ( $= d \times (\sin \theta + \sin \alpha)$ ) is a wavelength of diffracted light. ( col. 10 lines 129 to 139).

With respect to claim 35 Tanabe describes the optical film according to one of claims 30 to 32, wherein a pitch of arrangement of the gratings in a diffraction grating cell is constant and there are at least two grating pitches of arrangement of the gratings among the diffraction grating cells, a difference of the pitches being not greater than a value corresponding to the half-width of light diffracted by the cell or a value corresponding to the width of light diffracted by the cell. ( col. 9 lines 63-67).

With respect to claim 36 Tanabe describes the optical film according to one of claims 30 to 32, wherein said gratings contain the same profile and arranged in parallel with each other.



With respect to claim 41 Tanabe describes a display device comprising :  
a liquid crystal display layer which forms an image to be displayed; and  
a light reflecting optical film which is arranged on a rear surface of the liquid crystal display layer ( figures 4,5 etc.) and comprises diffraction grating cells arranged in a matrix, each cell comprising curved gratings, wherein said gratings include at least two grating pitches.

With respect to claim 50 describes the display device according to one of claims 41 to 43, wherein said liquid crystal display layer comprises pixels arranged in a matrix; and a pitch of arrangement of said diffraction grating cells is integer times of a pitch of arrangement of said pixels or vice versa.

With respect to claim 60 describes the display device according to one of claims 52 to 54, wherein the grating has a gentle slop and a steep slope in a cross section and the gentle slope is directed to above a display screen of said display device. ( Tananbe figure 6 , col. 6 last line to col. 7 lines 1-2).

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H Rao whose telephone number is (703) 306-5945. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.

  
SUPERVISOR  
TECHNICAL STAFF